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MARKETING ACTIVITIES



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Good Butter Tastes Good

By B. J. Ommodt

Butter grading--the business of putting a quality label on butter--is really an art. It's an art because it has not yet succumbed completely to the age of gadgetry and science. It probably won't either, unless we start tasting and smelling our food with gimmicks rather than with our senses. For that's the way a Federal butter grader tests butter--with his five physical senses of smell, taste, sight, touch and hearing. Through them he evaluates the various factors and arrives at the final grade, according to a quality standard or measuring stick known as the U.S. Grades, AA, A, B, C and CG (cooking grade).

The butter grader in the act of grading is not concerned for the moment with the chemical composition of the product as such, but with the product as it is composed of a mixture of various compounds such as butterfat, color, water, and with or without salt added. He is concerned with the physical composition of the compounds, which when properly combined go to make up a very highly palatable, nutritious product which we call butter.

Some of the determinations might be done by laboratory analysis, but so far no one has been able to develop a test for butter that will replace the human senses. The laboratory tests that come nearest are long, tedious and costly operations.

For this reason the five senses must be relied on so heavily, and since the acceptability of the product is dependent upon its flavor and appeal to the customer, the greatest emphasis is placed upon the flavor and the odor.

Flavor Rating Most Important

U. S. butter grades are set up on the principle of identifying the particular flavor present, and thus, by referring to the official chart, the flavor rating is automatically determined. The proper identification of the particular flavor and its intensity, based upon one's sense of taste and smell, is the significant point of the whole process. It is on this one factor that the grader must concentrate his greatest efforts if he is to evaluate to a high degree of correctness the particular flavor or mixture of flavors present.

Visualize, if you will for a moment, the average creamery in which the cream is mixed together in one vat for churning. Imagine the wide variety of flavors that might be poured together during the period of the day's receipts, each of which will contribute to some degree its influence on the flavor of the finished product.

It is because of this widespread practice of mixing cream of many

different flavors together that the grader sometimes experiences difficulty in properly evaluating the flavors on a uniform basis. It is here that the sense of smell comes into play and the keener it is, the better. It is, perhaps, the keenest of all our senses, but in the majority of cases it is the one which requires intensive training in order that it may identify a barely discernible aroma. The nose can pick up a mere trace of a substance or flavor which might otherwise be missed by the taste. Actually a great deal of our tasting is done by smelling, since many of our reactions called taste actually are determined from the aroma or sensation received when the volatile flavors are forced into the back of the mouth and into the nostrils.

The first act of a grader after pulling a sample plug on the butter trier, should be to observe the aroma for the full length of the trier. This must be emphasized, for it is often incompletely done through smelling only one position on the trier. The aroma must be observed intently from the end nearest the handle, which is the top surface of the butter, to the far or bottom end. Any distraction at this point by other interfering odors in the room, or by noise or confusion, may be the cause of the grader's missing some flavor which would affect the final grade.

Distracting Odors Avoided

It is for this reason that many graders do not use shaving lotions, perfumed soap or hair tonic, and are disturbed by any helper or observer who does. Smoking in the grading room would completely hamstring a grader's ability to identify a piece of butter. It is for this reason the regulations insist that the grading room be free from distracting odors, of a comfortable temperature, fully lighted, and free from traffic and other confusion. The conditions under which a grader works affect all senses, but not to the same extent as the sense of smell.

When the grader has sniffed the aroma of the plug of butter for the full length of the trier and has observed his findings, he should have a pretty definite opinion at that time of the quality of raw material that went into the product. Remember that a small quantity of dark color will affect the shade of the final blend much more than the same quantity of a soft delicate color, just as the poorer flavors, which are the harsh ones, will be more discernible than the finer, more delicate ones. This is a fact creamerymen must keep in mind when considering any quantity of a certain flavored cream intended for the vat. If the flavor noted is not classified in the particular grade of butter he wishes to make, then he shouldn't use it. If he does, he can expect the grader to find it in the finished product. The flavor of the cream put into the vat should be consistent with the flavor chart for the particular grade of butter desired.

The grader's next step will be to take a small quantity of the butter off the trier on a small spatula, place it in his mouth, noting the taste as he chews it and it melts down. It should be observed in relation to the aroma--the two should correspond. The taste is a means

of checking his opinion based upon the aroma. If the two agree, he has most likely properly catalogued the butter as to its character. He has by this time decided whether the butter was made from fine, high quality raw material with all the characteristics of AA grade, or whether it possesses flavor traits of one of the lower grades on the basis of the U.S. Grade chart. At this point he has used two of the five senses, that of smell and taste, in determining the most important phase of the grade --the flavor rating.

The sense of touch is brought into use when the trier is first inserted into the butter. Of course, the butter must be of satisfactory temperature for grading, but the grader can determine something as to the body of the butter by the way the trier feels as it is pressed into the mass. He gets impressions as to the firmness of the body, and whether or not it is sticky or weak. The sense of touch is again used when melting the sample down in the mouth. The butter may feel smooth, firm and waxy, or weak and mealy. The presence of gritty salt would be evident at that time.

The sense of sight is brought into use as the butter color is first observed, whether light or dark, bright or dull, uniform or mottled. The presence and size of the water droplets should be apparent, just as the grain of the butter granules will be evidenced by a bright or dull appearance.

Perhaps you've been wondering how the sense of hearing may be used. Well, actually it's not often that we can use the sense of hearing, but when a plug of butter which is quite leaky is replaced in the hole, the free water might give a swishing sound which would be the final evidence that the butter should be cut a full point in body for leakiness.

Grade Based on Flavor Rating and Defects

The cuts for body, color and salt defects are determined by their intensity, and the final grade is given to the churning upon the basis of the flavor rating and the defects for body, color and salt. On all grades of U.S. Grade B or higher, defects in excess of a total of one-half point will lower the final grade to the next lower applicable grade from that of the flavor rating, according to the chart set up in our standards.

Now a grader can make all these observations in less time than it takes to tell about them, for one can go through the routine rapidly under satisfactory working conditions. The degree of accuracy will depend upon the natural ability, qualifications, and training of the grader, the conditions under which the butter is examined, and finally, the skill and care with which the butter was made.

This last point is important and bears repeating. Though there is a high degree of efficiency among trained and qualified graders, the end result will be improved if the raw material is segregated at the creamery in accordance with the U.S. grade desired in the finished product.

This is assuming of course, that the processing operation, including standardizing of acidity, pasteurizing of the cream or working of the butter has not been carelessly done.

Graders know that in the blending of a wide variety of flavors the poorest flavor will establish the grade. It is to the benefit of the buttermaker to keep this in mind. For example, the detection of stale cream in a piece of butter, even though present in only a small amount, will lower the grade to "C", when otherwise the predominating flavor might have been that of old cream and then given the grade of "B". Also, a musty flavor found in otherwise "A" quality cream will cause the butter to be placed in "B" or "C" grade. No longer can cream grading be considered merely a segregation on the basis of sweet and sour. It must be divided according to flavor, regardless of the acidity.

Keeping Qualities Affected by Salt and Water

Butter graders are careful to notice the nature and amount of water and salt in the finished product, not merely because of texture and flavor or losses through actual leakiness, but because it directly affects the keeping quality of the finished product. All graders and creamery-men are familiar with the keeping quality of salted butter as compared with unsalted butter. It is known too that bacteria must have food and moisture on which to grow and propagate. If the water droplets are small and finely dispersed, the amount of food and the area for the bacteria to grow in will be definitely limited. Also, with thorough working, the salt will be more evenly distributed and each fine droplet of water will contain salt which may be in sufficient concentration to inhibit bacterial growth. In this case the actual number of bacteria present for each individual droplet will be reduced, and in some cases the small droplets may be actually sterile. On the other hand if the water is present in large droplets, there is greater chance that more of them will contain sufficient inoculation of bacteria to start decomposition, and there may well be sufficient curd or food and moisture present for unlimited growth. Uneven distribution of salt and water may explain in part how the keeping quality or even the grade may be altered on two churnings made from split vats of the same cream.

Federal graders and distributors of butter realize that the consumer expects butter of high quality--which stays that way until all of it is consumed. And they know too that this is the only product which will build sales for a creamery. Certain local, State, and Federal laws pertaining to control of sanitation and composition of the products must be recognized. And it is not enough to have a quality product today which next week may deteriorate to the dissatisfaction of the consumer. Obviously, what is needed is step by step control based on rather definite requirements at every stage of the butter-manufacturing process, coupled with the Federal butter grader's impartial evaluation of quality factors in terms of U. S. Grades. Such controls and impartial evaluation of quality would go far toward supplying the consuming public with an even more satisfying product.

Tung: Old Crop With New Uses

By Donald Jackson and J. C. Eiland

Tung oil--something of a mystery product since Marco Polo first carried word of it from Kublai Khan's dynasty to Venice in the 13th century--is not the complete stranger you may think it is. It is a component of the oilcloth on your pantry shelves and a water-proofer of the raincoat you wear on a wet morning.

Whatever the ancients may have thought about tung oil and its unusual qualities, it is nothing more nor less than a first rate commercial oil whose importance in our economy is determined by its chemical properties and our skill in putting it to work.

Tung has been called the world's fastest drying and most durable natural oil--two designations that earmark it for many specific uses. Most widely it is utilized as a drying agent in paints and varnishes, though its durability, special insulation and waterproofing qualities serve to greatly broaden its utility.

Actually, its list of uses is as varied as it is long. Gaskets, brake linings, printing and lithographing inks, caulking materials, insulations for electrical appliances, water-proofing preparations for munitions and shell cases, and acid-resisting coatings for food containers all utilize tung in varying amounts.

Tung First Imported in 1869

Tung has been used for centuries by the Chinese as a multi-purpose oil--as a base for their famed ceramic lacquers, as a caulking agent for water proofing their junks, and in China's interior, as a rather smoky illuminant. The first two uses are the tip-off to our first and still most important commercial utilization, for since the turn of the century tung oil has been imported from China as a significant raw material for our paint and related drying industries. According to the available records the first imports of tung to the U.S. were made in 1869, but it was not until after 1900 that tung shipments expanded into one of China's most valuable exports.

Even as the volume of China's exports grew however, tung's versatile nature earned it such an increased rate of consumption in the United States that the supply was often inadequate. Moreover, as China's recurring internal conflicts served to complicate trade activities it was no surprise that new sources of tung oil should be sought.

Although China had constantly maintained a strict monopoly on tung production, in 1906 a handful of kernels were brought to California where plant scientists soon produced a few seedlings. In the meantime it was determined that an area in northern Florida most closely resembled tung's native China in climate and soil conditions, so it was there that the seedlings were transplanted and the first bushel of American tung nuts produced in 1911. In 1947, more than 53,000 tons of tung nuts were pro-

duced by the 14,000,000 tung trees growing in the tung belt--a 50 to 100 mile strip of land skirting the Gulf coast and crossing 6 States. Mississippi now leads in tung production with Louisiana, Florida, Alabama, Georgia and Texas following in the order of 1948 production.

Domestic production of tung nuts and oil, imports of oil and factory consumption, ^{1/} 1939 through 1948 (preliminary) are as follows:

Year	Tung nuts	Domestic oil	Imports	Total Consumption
	tons	1000 lbs.	1000 lbs.	1000 lbs.
1939	: 1,160	: 3,000	: 78,718	: 90,720
1940	: 11,000	: 62	: 97,049	: 59,057
1941	: 8,750	: 3,533	: 43,800	: 54,008
1942	: 16,350	: 2,290	: 8,269	: 11,830
1943	: 6,200	: 5,310	: 68	: 12,047
1944	: 26,680	: 2,258	: 1,771	: 10,109
1945	: 37,080	: 10,353	: 339	: 21,569
1946	: 57,400	: 11,046	: 36,207	: 28,962
1947	: 53,200	: 12,680	: 121,564	: 88,359
1948	: 67,200	: 16,749	: 133,214	: 119,275

^{1/} The use of tung oil was restricted to essential uses during the war years. ^{2/} Tung nuts are by crop years; other data are by calendar years.

Judging from the highly specialized nature of tung oil you might expect tung trees to demand unusual and exacting care. But while tung is highly sensitive to certain weather and soil conditions it is not a prima donna. In China it thrives as a hardy hillside native and is rarely cultivated. In this country, however, it has been found that intensified cultivation is essential to maximum yields of top quality nuts.

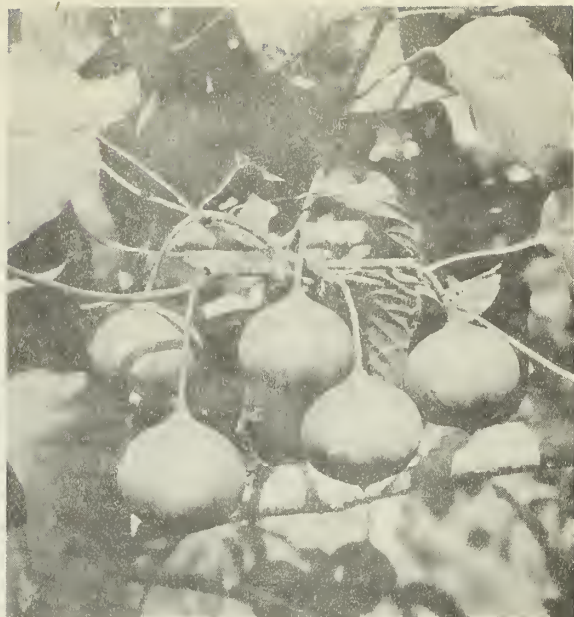
Tung thrives best in regions where a long warm growing season is ended by a few weeks of winter weather cold enough to denude the trees of their heart shaped leaves and prompt a brief rest or dormant period. It has been found that part of the waste and cut-over timberland areas of the south can be profitably utilized in production of tung.

Rolling or hilly terrain is ideal where tung groves may be planted on the slopes for purposes of frost and drainage control. A loose, gravelly, slightly acid soil with a moisture-holding subsurface layer is ideal.

Tung, meaning "heart" in Chinese, and so named because of the leaf shape, is generally transplanted during the dormant season as seedlings spaced 20 feet apart in rows. The trees may grow to heights of 30 to 50 feet and they usually produce nuts after the third year, with maximum production coming after the 7th or 8th season. The nuts are quince shaped, with three to five and even seven kernels spaced evenly within the hard segmented outer shell. The kernel makes up approximately a third of the weight of the entire fruit, though this proportion will vary with different growing conditions and soil fertility. In the studies made thus far applications of commercial fertilizer have generally increased the net yield of oil. In groves of mature trees where good natural conditions are aided by cover cropping and several months of cultivation to control weeds, fruit yields of 1 to 2 tons per acre are not uncommon,



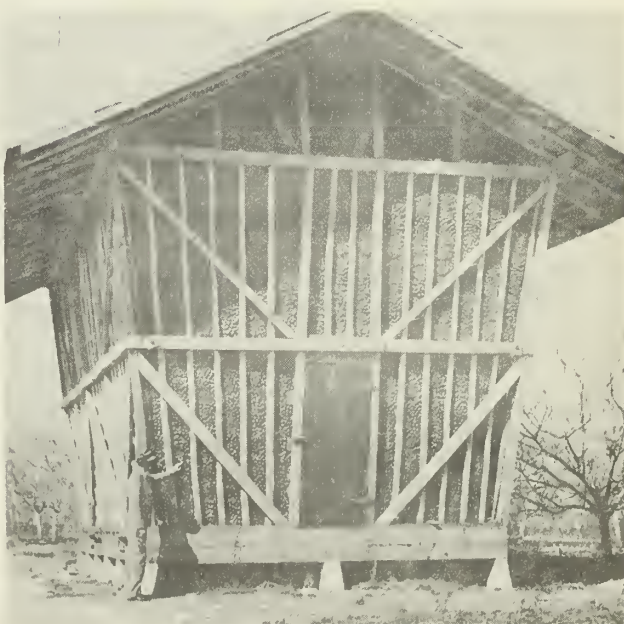
Ripe tung nuts are usually suspended from the dormant trees for several weeks of further drying. Cover crops planted between the rows provide humus and control weeds and soil erosion.



Fully developed tung nuts of the "multiple cluster" variety. The fruit, about the size of a russet apple, changes from an olive green to a dark brown before it falls to the ground in October.



The triangular kernels make up about one-third of the weight of the entire fruit and are by far the most valuable component. The kernels must be dried before pressing.



This special type drying barn has in some areas replaced the drying of the bagged fruit in trees. A fine wire mesh permits free circulation of air under the broad protecting roof.

though this cannot be considered an average yield. This yield is considerably greater than that normally harvested when the crop was first introduced, and this fact substantiates the belief that tung responds well to cultural practices.

The tung fruit ripens in September and October and falls to the ground where it is allowed to dry for several weeks. The harvest usually consumes an equivalent period, depending on the weather and the availability of hand labor. Generally the nuts are picked from the ground on a pay-by-the-unit basis with the rate varying considerably according to the yield per acre.

Because green nuts cannot be stored even at the mills, the bagged fruit is customarily dried further by suspending it in the crotches of the trees, though some producers instead place the nuts in corn crib-style drying bins until they are delivered to the mills.

Oil Content Important Factor

The marketing of the tung fruit is begun as soon as the nuts have reached a moisture content acceptable to the millers. Most of the nuts are brought in to the mill by the grower and sold on an oil content basis, determination being made by laboratory methods. The system most widely used is known as the "component part" method which is simply a means of fixing the oil content in terms of percent of the whole fruit. Oil content of moisture free kernels varies from 63 to 68 percent, depending somewhat on growing conditions and the location of the orchard.

Roughly the three whole fruit components are as follows: black outer hull, 50 percent; shell surrounding the kernel, 18 percent; and kernel, 32 percent. The price paid for the nuts may vary several dollars per ton and is based on the oil content, a factor directly affected by the percentage of moisture in the kernel.

Some of the larger growers no longer sell their whole harvest outright but instead have the oil extracted by the mills on a custom basis after which the oil is sold. The mills do this on a cash, ton basis providing necessary storage facilities for the nuts and the oil.

In 1948 there were 12 tung mills in operation in the five leading tung producing States. All these mills use the expeller type presses for extracting the oil from the whole nuts, although experimental work continues in developing a favorable solvent extraction unit. At least one mill now uses solvent extraction to take oil from the filter press cake and other residue commonly called "foots". The principal advantage to be derived from solvent extraction appears to be the increase in oil removed which would normally be lost in pressing operations. Laboratory experiments have shown this to be as high as 56.8 pounds of oil per ton of whole air dried fruit.

In present day methods of expeller extraction it is important that the moisture content be about 15 percent in the whole fruit to give the best results, for experiments have shown that this condition offers the best extraction efficiency. Whole fruit this dry will produce a meal of

about 5 percent moisture content, the most desirable proportion for ease of operation and oil outturn.

The first step in processing is to remove the outer hulls and most of the inner, pithy shell. Some of this inner covering is left because it appears to give better friction and thus more efficient processing. If the kernels are still too damp further drying is necessary. The kernels are then ground in an "attrition" or friction type mill and "tempered" or heated to condition the meal for the expeller.

Under intense pressure the oil is extracted and filtered to remove the "foots", and then stored in large tanks adjacent to the mills. Of the three products: the oil, the press cake and the hulls, the first is by far the most important. The meal is now used for fertilizer only because feasible methods of detoxifying the meal have not been developed for commercial use. If experimentation along this line brings satisfactory results the high protein press cake will take its place in the feed class with soybean, cottonseed, and linseed meals, and thus its value will be greatly increased.

In regards to pounds used, tung oil stands third in our drying oil industry. Tung oil's unique value is based largely on its ability to absorb oxygen quickly--the chemical feature responsible for its rapid drying qualities commonly indicated by its high iodine number. Moreover, it absorbs moisture even more readily than this number indicates because of the unique structure of the molecule. Tung oil in the pure state is nearly clear, with a faint amber tinge, and a slight, characteristic odor.

Paint and Varnish Most Important Use

The three industries leading in tung consumption, in order of amounts used, are the paint and varnish, the oilcloth and linoleum, and the printing ink industries. Paint and varnish consumes more than 80 percent of the total. Utilization as a waterproofing agent and brackelining fortifier are important but small with regard to amounts consumed.

The market for tung in the United States is located principally in the Northeast and Middle West, where the paint and varnish industry is centralized. Even though some synthetic substitutes have been developed, the long-time outlook is favorable--providing production, processing, and marketing costs are kept in line with corresponding costs of competing oils. Some of the substitutes such as alkyd resins themselves utilize tung oil in their preparation. Furthermore, it is likely that as new synthetics displace tung in old uses the displacement will be offset by new and different utilization.

The average price of tung oil has fluctuated from a low of 6 cents to a high of 40 cents per pound during recent years. The high point was reached during the war when only minor amounts were imported. The Commodity Credit Corporation supported the price of tung oil in 1947 by agreeing to pay contracting processors 25 cents per pound for tung oil, f.o.b. mill, provided the processor paid not less than \$72 per ton, basis 20 percent oil content. No price support program is in effect for the 1948 crop.

RMA Work Extensive Under PMA

By John I. Thompson

The Production and Marketing Administration is taking an active part in the work in progress under the Research and Marketing Act of 1946. PMA's part deals mainly with the marketing aspects of the research and service work provided for in the act. The following is a summary of such activity in each of the PMA branches doing work under the RMA.

MARKETING RESEARCH BRANCH

Under three broad-scale Research and Marketing Act projects, the Marketing Research Branch of PMA is cooperating with State departments of agriculture and bureaus of markets in carrying on some 60 lines of work. The aims are to expand market outlets and the consumption of farm products, and to increase the operating efficiency of markets and marketing channels and agencies.

This is a many-sided job. Local market agencies are given help in estimating the quantity and quality of various farm products that will soon be coming to market, and in finding outlets for them. Help is given in improving the preparation of crops for market. With the cooperation of Extension Service, information is given on the degree of maturity at which various fruits should be picked, to assure their arrival at market in satisfactory condition. Cotton ginneries are assisted in improving their operations. More accurate seed sampling and testing is developed. Useful outlets are sought for local surpluses of sweetpotatoes, white potatoes and other crops. In one State a survey has been made of the acreage of fruits and nuts by counties, by age of trees, and by varieties.

North Carolina Work Typical

Some of the marketing service work done in North Carolina is broadly typical of such work in other States. In North Carolina the large sweetpotato crop presented a difficult marketing problem. With the aid of a State specialist, an auction for sweetpotatoes was organized at Tabor City. More than 300,000 bushels were sold there, the growers for the first time receiving the benefit of price premiums for quality. Growers were helped to pack their product so as to meet standard grades. Demand for the crop was generally improved by better preparation of the sweetpotatoes for market and by diversion of the low-grade stock to nonfood uses. About 500 tons of dehydrated sweetpotatoes were produced from inferior stock for use as livestock feed, and a State marketing man helped to find outlets for this product.

In addition to working with State Departments the branch is conducting research along several lines. Preliminary experimental work has

been started at Baltimore on a study of the feasibility of establishing a retail market news service for the food trades. If setting up such a service at reasonable cost seems feasible, daily reports on retail prices will be issued as well as weekly reports on volume of sales and retail inventories. The project has three aims: To facilitate more orderly marketing by keeping the trade informed when stocks of a food begin to pile up in retail or wholesale channels or when the supply shows signs of falling below demand; to provide a sort of buying guide for consumers; and to provide a better base for integrating the farmer's price with the price paid by the consumer.

Another line of work deals with improvements in the wholesale market news services. Objectives are uniformity in terms used to describe market conditions, improved presentation of the news, greater accuracy of quotations, and wider distribution.

Standards Are Studied

Another study in this branch looks to improving the over-all adequacy and effectiveness of the Department's grades and standards program for farm products. Aims are to determine the feasibility of establishing greater uniformity among commodities in specifications, number of grades, and grade terminology; to develop uniform policies among commodities in the general administration of grades and standards regulations; and to obtain more uniform interpretation and use of grades and standards by State, municipal and commercial groups.

Studies of prepackaging perishable foods to learn the relative costs and salability of prepackaged products in comparison with bulk products in several regions are nearing completion in connection with the merchandising of Florida sweet corn, cauliflower, and broccoli. Sales of prepackaged Florida kale and spinach in Baltimore also have been studied. This is only one part of a study to determine how feasible, profitable, and effective on demand is the prepackaging of numerous perishable foods, including fruits, vegetables, meats, and other commodities.

Two other lines of work are designed to improve efficiency and reduce costs in retailing and wholesaling, and to develop improved merchandising practices for agricultural products. These will include studies of how, when, and where consumers prefer to buy; evaluations of the effectiveness of various kinds of store equipment for displays and of devices for automatic selling; studies of additional lines of goods that might profitably be added in supermarkets, and of the size limit at which expansion of a supermarket becomes unprofitable; experiments with new types of "convenience stores" serving the consumer in his own locality, and the place of the small store in the future grocery marketing system.

A study of the selling of textiles as an added item in a food store chain is being carried out with the cooperation of a supermarket chain in Houston, Tex. The purpose of the tests is to determine consumer acceptance and sales costs of apparel and other textile items sold in food stores. Similar sales methods for textiles are being studied in other

stores in several cities, so that comparisons may be made. Prepackaging and self-service are factors in the study.

Another project deals with the adaptation of modern industrial management practices to the improvement of efficiency of agricultural marketing agencies, particularly in processing. One of the management tools most widely and successfully applied in industry is work simplification and time and motion study, designed to increase labor efficiency. Ways of applying these methods in reducing operation costs of agricultural marketing units are being studied under this project.

Studies of the economic efficiency of new refrigeration methods for railway cars are being made by the branch. Particular attention is being given to mechanical refrigeration and heating in comparison with present icing and heating methods.

MARKETING FACILITIES BRANCH

The Marketing Facilities Branch has studied, under the RMA, numerous city wholesale, retail, and farmers' markets, made recommendations for their improvement, and assisted in having the improvements put into effect.

The branch developed plans for laying out efficient city markets, constructing buildings for proper handling of fruits, vegetables, poultry, and other produce, and providing for transportation. It has completed, or has in progress, surveys in 27 cities as a basis for estimating the probable land, building, and equipment needs for improving the markets.

Results of this work are appearing in actual improvements in the marketing facilities of several of the cities surveyed. The branch serves only in an advisory capacity and provides no funds for market construction.

In the city market studies, methods used to handle perishables are analyzed to learn the need for improvements. The kind, size, and amount of facilities that would handle the commodities most efficiently are determined. The final report describes the facilities needed, the best location for the proposed new market (when one is warranted), and the cost and methods of financing and administering it. Advisory aid is given in arranging for the actual building or improving of facilities in accordance with the Branch's recommendation.

Also in progress is a study of the efficiency of methods and equipment for handling produce at markets, in loading and unloading, during storage in warehouses, and in other physical operations.

In another study an attempt is being made to find out the kinds of information needed by the frozen food trade--such for example as data on stocks in storage by commodities and container sizes.

Transportation rates on fish and fish products also are under examination. In part, the aim is to eliminate any inequities that may be found between these rates and the rates for other commodities. Branch representatives appear before rate regulating bodies in the interest of the industry when rate revisions are being considered.

Other work is expected to bring about improved utilization of transportation equipment. Studies of the movement of thousands of freight cars have been made and the data are being analyzed to determine causes of delays and to develop methods of handling cars so as to reduce the idle time spent at loading points and terminals.

COTTON BRANCH

Research on improved equipment and on improved methods of processing and storing mechanically harvested seed cotton is being carried on at the USDA laboratory at Stoneville, Miss. Objectives are to find the ways of putting seed cotton into the best condition for ginning in order to improve the quality and raise the market value of the lint and seed, and to make more effective use of present ginning equipment.

Improvement in marketing the various kinds of cotton, to facilitate procurement and use of the type best fitted to each particular manufactured product, is the objective of another line of research. Studies are being made of the types and quantities of cotton now used in selected specific products.

The Cotton Branch, cooperating with other USDA and State agencies, is studying the marketing of one-variety community cotton. Physical characteristics and capabilities of the cotton, its movement through trade channels, mill requirements for the different varieties, and marketing cost factors are being surveyed.

Experiments are in progress to develop a rapid and simple method of measuring the oil content and the quality of cottonseed.

DAIRY BRANCH

A study of the changes in recent years in market outlets for milk and cream is being made by the Dairy Branch to determine possible methods of maintaining and expanding these outlets.

In a survey of the pricing of surplus milk in the Chicago area, prices paid at plants under Federal regulation are being compared with prices at plants not so regulated.

A report is being written on findings in a study of the sources and movement of milk in the Philadelphia marketing area.

A long-range study of the yield of various dairy products from a unit quantity of milk is under way in cooperation with USDA's Bureau of

Dairy Industry. The purpose is to learn how much of such products as market milk, cream, cultured buttermilk, cheese, ice cream, and casein is produced from a certain volume of milk.

The effects of basing the prices paid for milk and dairy products on price quotations for butter and cheese at central markets is being studied in cooperation with the Farm Credit Administration.

FATS AND OILS BRANCH

A study of cottonseed processing methods, one of several lines of work in the Fats and Oils Branch, seeks to answer these questions: To what extent may the solvent extraction process be adapted to the cottonseed crushing industry? What effects could this change have on the entire cottonseed industry? PMA conducts this work in cooperation with the Bureau of Agricultural Economics and the Farm Credit Administration.

Economic factors in the various practices and techniques now in use in processing and marketing oilseeds are being studied, to find out which of them are the most efficient and economical. So far, cottonseed has been the only commodity studied, but the branch is now beginning a similar study of tung nuts.

Also in progress is a study of the factors involved in the storage of oilseeds and of the adequacy of storage facilities.

Factors affecting the outturn and quality of oilseed products are being studied in a long-range project. Influences of variety, of location (where the crop is grown), of time of processing, and of other factors on the quantity and quality of the oil and other component materials produced are to be determined.

Work on developing new and expanded markets for oilseeds and their products is in its preliminary stages. The Bureau of Agricultural Economics is cooperating.

FRUIT AND VEGETABLE BRANCH

An outstanding marketing problem in recent years has been to find uses for large potato crops. Two reports have been issued by the Fruit and Vegetable Branch as a result of studies of the problem under RMA.

The feeding of cull and low-grade potatoes to beef cattle, dairy cows, hogs, sheep, and other animals has been shown to be feasible when expensive transportation is not involved. Numerous tests have shown that the feeding value of raw potatoes is about equal to that of corn silage, and that potatoes can be substituted for a part of the grain ration with advantage to growers of both potatoes and livestock.

Another part of the study was a survey of the potato-marketing problem in the producing areas of west Texas, where local surpluses have been large.

The branch is assisting the Bureau of Plant Industry, Soils, and Agricultural Engineering, and certain State experiment stations, in a study of methods of harvesting, handling, storing, washing, grading, loading, and shipping potatoes in major producing areas.

A study is being made of marketing problems in the Tennessee-North Carolina-Virginia snap-bean producing area. The resulting report will contain recommendations for broadening outlets for the crop. The sweet-potato industry of the Maryland-Virginia Eastern Shore area is being studied in an attempt to relieve marketing difficulties in another area where price-support buying by the Government has been necessary.

In another study, retailers are instructed in the proper care, handling, trimming, display, and merchandising of fresh fruits and vegetables. The aim is to reduce losses through spoilage and to offer better-quality products to consumers. Operating under a contract with the branch, the United Fresh Fruit and Vegetable Association has conducted approximately a thousand training courses in more than 50 cities, instructing more than 8,500 retailers and employees.

Grade and Standards Established

The development of new and revised standards for grades for processed fruits and vegetables is a continuing RMA study. New or revised standards have been issued and have become effective for frozen strawberries, raspberries, grapefruit, pineapple, spinach, and canned green and wax beans, canned beets, canned dried beans, fruit jelly, olive oil, and cucumber pickles. Tentative new or revised standards have been drawn up for canned items such as grapefruit juice, orange juice, blended grapefruit and orange juice, tangerine juice, white potatoes, black-eyed peas, and for fruit jams. Standards for dried fruits are being revised, and work is in progress on standards for several additional commodities.

Research upon the drained weights of frozen asparagus and peas and the fill of containers of frozen peaches, strawberries, and raspberries was conducted under contract by the National Association of Frozen Food Packers. The findings are being studied in connection with revisions of standards for these commodities.

Work is now under way upon the development of standards for grades of fresh fruits and vegetables and edible tree nuts. Under this work, emphasis is being given to the development of standards for products for which no standards now exist, the development of new types of standards, such as consumer grades for prepackaged products, and the development of objective methods of measuring physical characteristics as a part of the inspection for grade.

Revision of the standards for farmers' stock peanuts, cleaned peanuts, and shelled peanuts is progressing, along with research on improved inspection methods for determining the quality of peanuts.

An improved mixer and divider for use in grading peanuts has been

developed. Certain devices for determining the moisture content of peanuts have been tested for accuracy and uniformity.

Shipping Containers Compared

Information on the many types and sizes of shipping containers used for fresh fruits and vegetables is being gathered and will be summarized and made available to the industry, to container manufacturers and others interested. Economic studies also are to be made of comparative costs and returns from the use of varying types of shipping containers.

An appraisal of the marketing of "conditioned" winter pears is being made under another RMA study. These pears, from the west coast, are picked before they are fully ripe and are held in cold storage until late fall or winter. When they have been kept about a week at proper temperature and humidity, they ripen into a delicious fruit. Until comparatively recently, winter pears have been sold without adequate attention to ripening or "conditioning." Purpose of the study is to discover the relative effectiveness, feasibility, and returns by evaluating the marketing of "conditioned" winter pears by different methods.

Commodity Range Is Extensive

A general study of the marketing of fresh, canned, and dried fruits, as well as edible tree nuts, has been started. Factors that affect purchases of fruits, fruit products, and edible tree nuts by consumers and industrial users, such as bakers, and the development of better packaging, pricing, and merchandising practices will be studied. Information also will be obtained on retailing of fruits and fruit products.

Preliminary work has been done on a study designed to learn the relation of the quality of raw fruits and vegetables to the quality and outturn of processed products.

In cooperation with the Bureau of Agricultural Economics, the Bureau of Human Nutrition and Home Economics, and experiment stations in the North Central States, the branch is taking part in a study of quality-price relationships of potatoes in the North Central region.

The branch is assisting the experiment stations in certain Western States, the Bureau of Agricultural Economics, and the Bureau of Plant Industry, Soils, and Agricultural Engineering, in a cooperative study of new methods of grading, packaging, and shipping potatoes and of consumer acceptance of the product so offered.

In another study of potato marketing in cooperation with State experiment stations, the Bureau of Agricultural Economics, and the Bureau of Plant Industry, Soils, and Agricultural Engineering, the branch assisted in obtaining data--in New York, Philadelphia, and Boston--on the quality of potatoes in retail stores.

A broad cooperative study of methods of marketing vegetables and their products in the Northeast is being conducted by state experiment

stations, the Bureau of Agricultural Economics, the Bureau of Plant Industry, Soils, and Agricultural Engineering, and the Fruit and Vegetable Branch. The branch is assisting in the development of objective methods for measuring quality in vegetables.

Experiment stations in Florida and Texas, the Bureau of Agricultural Economics, the Farm Credit Administration, and the branch are cooperating in a study of costs and margins of handling fresh and processed citrus fruits at the different levels of distribution.

The branch is assisting experiment stations in the Western States, the Bureau of Agricultural Economics, and the Farm Credit Administration, in a study of practices and consumer preferences in the marketing of peaches.

GRAIN BRANCH

Progress has been made on a project whose object is to determine, through fat acidity tests, the quality of grains, particularly wheat.

Production of alcohol from grain on a commercial scale by a new mold process is under way, through contract with the lessee of a Government conventional malt process was developed on a pilot scale by the Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration.

A progress report has been issued on the first part of a study to determine methods of maintaining the identity of improved varieties of grass and legume seeds in trade channels. Thus far, the study has disclosed details of handling some of these seeds and has indicated the points at which seed identity may be lost or at which mixing of different lots of seed may obscure the character of the seed when sold.

Seed Analysis Aims at Uniformity

Work on developing more uniformity among the States in sampling and testing seeds is in its early stages. State agencies are cooperating to attain uniformity in sampling and testing techniques and to interpret the factors observed.

As part of an effort to develop a simple, rapid method of determining the content and quality of oil in oilseeds, the branch is seeking such a process for use with soybeans and flaxseed. If a method and apparatus are developed, their use later may be included as factors in making up the standards for oilseeds.

Preliminary findings in a study of the causes and possible methods of retarding the staling and flavor deterioration of bread include records of the rapidity, with which the product grows stale under varying temperatures, humidity, and other conditions as it is handled between the baker and the retail store.

Bread-baking qualities of wheat are being studied under contract with private laboratories. Chemical tests are being made to develop a fast and simple way to measure differences in baking qualities of wheats of different varieties, and differences caused by weather variations.

In cooperation with the Bureau of Dairy Industry, a study of the correlation of hay grades with the actual feeding value of the hay is under way.

Improved methods and equipment for drying and storing grain, seeds, and feed are being studied in cooperation with other USDA agencies. Thus far, most of the work has been done to improve the drying of corn.

The effect of various price levels on demand for major grains for various uses is being studied with the Bureau of Agricultural Economics. That agency is studying factors that affect prices and the effects of prices and other factors on the production and marketing of food and feed grains. On the basis of those findings and other information, the Grain Branch will attempt to develop ways to expand the use of grains for food and feed and in industry, when expansion seems advisable.

Practices of the trade in packaging dry beans, peas, and rice are being surveyed by the branch. The aim is to learn which methods and equipment for packaging are most efficient and which sizes of packages are most suitable, considering economy, salability, and prevention of deterioration of the product.

Development of equipment to determine the quantity and quality of milled rice obtainable from rough rice is the object of a study handled under contract with a private agency. After a survey of the equipment in use in mills, new apparatus was developed and is being tested.

LIVESTOCK BRANCH

Six major stockyards have been studied under a plan to improve marketing services, facilities, and methods at public stockyards.

Improved application of grades for live animals is the aim of another study. The specific aim is to bring about a better correlation between the grading of live animals and the grading of the carcasses of the same animals after slaughter.

Photographic illustrations of factors that determine the grade of meats have been prepared in another study, designed to improve the grading of both livestock and meats. The pictures illustrate the conformation, marbling, color, and other factors that indicate the grades in cuts of beef. Use of sets of pictures is expected to enable most graders to do their work more accurately. Photographs illustrating the grades for live animals will be made for similar use.

Development of an improved type of scale for weighing livestock at markets is progressing. The objective is a scale that will automatical-

ly print the weight of the animals and eliminate the human factors involved in the use of hand-operated scales.

The Livestock Branch is cooperating with the Bureau of Agricultural Economics in a study of probable U. S. wool requirements and of the most feasible sources of supply in future years. Improvement in the packaging of wool through skirting and sorting at ranches, concentration points, and warehouses is being sought to enable domestic wools to compete on a more favorable basis with foreign wools. Another line of work is the development of improved standards for wool and mohair.

Weekly reports are being made on livestock slaughter and meat production under Federal inspection, and in the same project, monthly estimates are made of total commercial slaughters on a state-by-state basis.

POULTRY BRANCH

Extensive studies on deterioration and losses of eggs in marketing channels have been made by the Poultry Branch, in cooperation with the Bureau of Agricultural Economics, the Farm Credit Administration, and 13 midwestern State agricultural experiment stations. Additional studies are being made to develop improved packing, processing, shipping, and storage practices. Ultimately the survey is expected to supply information on the importance of each of the factors affecting the qualities of the product from producer to consumer.

A study of the marketing of hatching eggs and baby chicks in the Northeast and the Delaware-Maryland-Virginia peninsula is nearing the report stage. Among the factors studied are costs and effects of shipments by truck, rail, and air; hatchability of eggs handled in different ways; prices, sources of supply, and outlets.

Difficulties encountered in the marketing of ducks from Long Island, Massachusetts, and Michigan are being studied cooperatively with Cornell University.

A cooperative agreement has been made with a trade organization to study improved methods and equipment for cleaning and sanitizing dirty eggs, which is a major problem in the industry.

The branch is testing the "thermostabilization" process as a means of maintaining egg quality. Tests are in progress to learn whether the application of heat under controlled conditions, to shell eggs will reduce the bacterial count and keep the eggs in good condition longer than the usual practices. Experiments are being conducted with liquid and dried eggs to eliminate bacterial infection in those products.

The branch has assisted the Bureau of Agricultural Economics and the experiment stations of several of the Western States in a study of factors affecting consumer demand for turkeys and the economic efficiency of the present marketing system.

SUGAR BRANCH

A quantitative study of the use by various food industries of the different kinds of sweeteners--such as corn sugar and sirup, cane and beet sugar and sirup, and liquid sugar--is being made by the Sugar Branch. A general study of sugar marketing is now concerned chiefly with a descriptive analysis of the marketing structure of various segments of the sugar industry in the United States. Marketing standards for sirups, edible molasses, and liquid sugar are being being developed.

TOBACCO BRANCH

The practices and workings of tobacco auction markets are being analyzed by the Tobacco Branch to learn the extent to which the facilities and services are adequate, and to learn what improvements are needed. Speculative auction buying is being studied. Plans are to extend the study to cover "barn-door selling"--that is, sales by the grower at his own farm. The efficiency and fairness of present marketing procedures will be appraised.

Determinations of the physical and chemical characteristics of tobaccos of different grades are being made as a basis for more precise and objective standards and grades. Decisions on grade now depend largely on the skill and judgment of the individual grader. A more scientific method is needed to check the accuracy of present standards and grading.

A study of centralized distillation of pine gum and its effects on turpentine and rosin production and marketing was made by this branch, and a report has been issued.

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A. A. BROCK NAMED NATIONAL RMA ADVISORY COMMITTEEMAN

Appointment of Anson A. Brock as a member of the National Advisory Committee under the Research and Marketing Act of 1946 was announced on February 25. He replaces W. Kerr Scott, who resigned when he took office as Governor of North Carolina at the first of the year.

For about 10 years Mr. Brock has been director of the California State Department of Agriculture. During 1937-38 he was president of the National Association of Commissioners, Secretaries, and Directors of Agriculture. At various times he has been Horticultural Commissioner of two counties in California, manager of the Placerville Pear Association, and field man for the Santa Paula Citrus Association.

The 11-man National Advisory Committee consults with the Secretary of Agriculture and other USDA officials, recommends research and service work as authorized in the act, and assists in obtaining cooperation in furtherance of research and service programs.

Farmer and Pharmacist

By Donald J. Lehman

Drugs of farm origin have long been a large part of the pharmacist's arsenal against disease and illness. In 1940, the volume of crude botanicals produced and used in this country amounted to about \$10,000,000 worth. Since then, new drugs of farm origin have appeared and served spectacularly. Still others show great promise as they move through the various steps of development.

Penicillin is one of the best known of the new drugs. Not a farm product, exactly, it is rather a laboratory product of byproducts of farm products. Its usefulness in combating infection is unrivaled. During the war, the Government and our allies set out to produce enough of it to keep down battlefield infections.

The Department of Agriculture undertook this production job at its Northern Regional Research Laboratory at Peoria, Ill., which houses one of the world's foremost collections of molds. By selecting higher yielding strains of penicillin mold, laboratory scientists raised the yield by more than 100 times. They also developed a process of propagating molds in deep tanks on a nutritious diet of corn-steep liquor and milk sugar. The process was adaptable to commercial production.

Penicillin Costs Greatly Reduced

Today about a dozen pharmaceutical houses are producing penicillin. The price of penicillin has been reduced to one-twentieth of its former price. The rate of penicillin production in 1948 was nearly 125,000 times the rate during the first 6 months of 1943, and the annual U. S. production is estimated at a value of \$150,000,000.

USDA penicillin research cost about \$100,000 in public funds for salaries and expenses. The research was carried on at a laboratory that represents a public investment of \$2,000,000. Here then is an investment of public funds that has paid off handsomely in dividends--for farmers, physicians, pharmacists, and the sick and injured.

At least four other drugs now under experimentation give promise of becoming a part of the pharmacist's stock in trade and of relieving human suffering. These are subtilin, usnic acid, tomatin, and polymyxin.

Subtilin and usnic acid show signs of being useful in the treatment of pulmonary tuberculosis. Subtilin is the product of bacteria that can be grown on waste juices from the commercial processing of asparagus or pears. Usnic acid is derived from Spanish moss.

Tomatin comes from the tomato plant. Potentially, this drug rates very high. It looks like a comer for treating some human diseases of fungus origin--such as athlete's foot.

Polymyxin is a drug that may prove useful in treating Bang's disease in cattle, a prospect certainly important to the livestock industry, But the drug also may lessen the danger of undulant fever, one of the most stubborn of human diseases. Like penicillin, polymyxin is the product of a microorganism. It is an outgrowth of the Department's war-time research on synthetic rubber.

In rutin, another new drug of extraordinary characteristics, we see the result of another adventure in research. This drug had been known for about a century, but its medical properties remained undiscovered. Then Dr. James F. Couch of the Eastern Regional Research Laboratory analyzed the minor constituents of flue-cured tobacco and found rutin among them. Its chemical structure suggested that rutin might be identical with the long-sought "vitamin P," an unidentified substance contained in citrus extracts, which had been found useful in remedying hemorrhagic conditions. The University of Pennsylvania undertook the necessary clinical research on rutin, and Dr. Couch's hunch as to its medical value became a verified fact.

Within the last 2 years rutin has become a valued drug available to the public. Its chief use thus far is in restoring the strength of weakened capillaries. It has been found to reduce the severity of injury to animals from X-ray burns and to speed the healing of these burns.

Rutin Now Obtained From Buckwheat

About fifteen pharmaceutical houses are now manufacturing rutin--extracting it from green buckwheat plants. Although tobacco was the first source of the drug, the demand for rutin increased as clinical research gained headway, and high-grade tobacco proved far too expensive a source. Intensive research at the Eastern Regional Laboratory showed the buckwheat plant, which contains about ten times as much rutin as tobacco, could provide the drug much more cheaply.

Rutin research cost the Government about \$300,000 in salaries and expenses. The 50,000 acres of buckwheat that may eventually be grown to produce rutin will be worth about \$2,000,000 a year to American farmers. The quantity of the drug which can be extracted from this crop would have a value of \$150,000,000 at current prices.

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BETTER PROCESSED FOODS SOUGHT

Making processed foods as tasty and nutritious--only cheaper and more convenient to use--than fresh foods is the ambitious goal of the New York State Experiment Station at Geneva. Food scientists there believe that a three-ply approach of improving raw materials, bolstering nutritional value and flavor of processed foods, and reducing the costs of processing will turn the trick. Combined efforts of biochemists, organic chemists, bacteriologists, plant physiologists, physicists, engineers and nutritionists will be called on in the project.

Peanut Mixer Perfected

The U. S. Department of Agriculture has developed a mechanical peanut mixer and divider that will bring about greater uniformity in mixing and dividing peanut samples and make more accurate grade determinations.

The importance of the new device lies chiefly in the fact that it divides defective peanuts between the two halves of a sample with a high degree of accuracy, eliminating the possible effects of such human factors as fatigue and hurry in the customary manual operation. Moreover, time required for the operation is cut from average times of two minutes and twenty seconds to twenty seconds, and in the process fewer kernels are broken, which improves the accuracy of grading.

The mixer and divider was developed, tested and perfected in the Fruit and Vegetable Branch of the Production and Marketing Administration under authority of the Research and Marketing Act of 1946.

When peanuts are inspected and graded, samples of approximately 6,000 grams (about 13 pounds) are taken from each carload. But inspectors use only about 3,000 grams in their actual grading, and save the other half for a second test in case of an appeal. Hence it is necessary to mix and divide the sample into two approximately identical parts to get an accurate grade.

Human Error Avoided

From the more than 25 years that USDA has been grading peanuts, inspectors have mixed and divided them by hand. As the hand method is subject to human error, the need for a mechanical mixer and divider has been apparent for many years. The machine worked out by USDA is the first device that has been proved equal to or better than hand mixing and dividing in 100 laboratory tests. The hand mixing and dividing was done by an expert under optimum conditions.

A sample of 6,000 grams was used in each test. A hundred nuts were dyed red and put in every sample to simulate defective nuts. After every test the red nuts in each half of the divided sample were weighed and counted. When the mechanical mixer was used, the red nuts were distributed by weight between two receptacles to within one-tenth of one per cent of an absolutely equal division 38 out of 50 times; to within two-tenths of one per cent eight times; to within three-tenths of one per cent three times; and to within four-tenths of one percent once. The results of hand mixing and dividing by an expert working under the best conditions were: to within one-tenth of one percent of an absolutely equal division, 35 out of 50 times; to within two-tenths of one percent, 13 times; to within three-tenths of one percent, once; and to within one half of one percent once.

The Fruit and Vegetable Branch is considering installing the mechanical mixers and dividers in at least 20 of its inspection service offices. Georgia and Virginia want to put the devices in their State peanut inspection offices.

1949 POTATO PROGRAM REVISIONS

The 1949 Irish potato price-support program establishes a single price of \$1.80 per hundredweight for the season for all potatoes which qualify as U.S. No. 2 grade 1-7/8 inch minimum or better. This price, based on the January 1, 1949, parity price is designed to insure support at 60 percent of parity, in keeping with provisions of the Agricultural Act of 1948.

The single price provision for 1949 is a departure from last year's two-price support in which U.S. No. 1 grade potatoes were supported at an average price of \$2.92 per hundredweight, while U.S. No. 2 grade 1 7/8 inch minimum and U.S. No. 1, size B grade were supported at \$1.46 per hundredweight.

Another significant change in the 1949 program is the February announcement of the complete price support schedule by States for the entire potato crop. The national acreage goal has been set at 1,938,300 acres--about 200,000 less than the 1948 planted acreage.

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APPLE STOCKS IN STORAGE APPROXIMATELY 2/3 OF AVERAGE

Apple holdings in storage as of February 1 are nearly 1/3 under the average cold storage holdings for the five-year period from 1944 to 1948. According to figures compiled by the New Jersey Department of Agriculture from the current USDA Cold Storage Report, stocks of apples amount to 12,900,000 bushels as compared to the February 1 five-year average figure of 18,907,000 bushels and the 1948 figure of 23 1/3 million bushels.

Out-of-storage movements of apples amounted to about 38 percent of the holdings as compared with the normal January out-of-storage movements of about 30 percent. Due to the smaller supplies, however, this year's January movements actually involved fewer apples. A breakdown of the movements by containers showed that regionally all apples moved proportionally well.

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MORE FROZEN FOOD

Increased use of freezer lockers and more freezer units is having some effects upon the general distribution of food commodities according to a report issued by the Louisiana State University and Mechanical College in cooperation with USDA. The report states that last year over 3 million farm families and about 1 million city and town families used freezer locker units to store about 1 3/4 billion pounds of food, mostly home grown. Throughout the country there are about 11,000 freezer locker plants in operation.

MARKETING BRIEFS:

Cotton.--In mid-February USDA announced that the Commodity Credit Corporation had sold its remaining stocks of 1947-crop upland cotton. This cotton, totaling 6,756 bales, was pooled for producers' accounts on August 1, 1948, and was offered for sale on January 5, 1949.... February 9 USDA announced that 1948-crop cotton under CCC loans averaged higher in grade and longer in staple length than the estimate for the entire 1948 crop. The grade index of 3,042,718 bales out of approximately 4,400,000 bales under loan on January 21, 1949 was 96.5 as compared with an estimate of slightly under 96.0 for the entire crop, (Middling White equals 100). Almost 40 percent of the loan stocks was Middling White and Extra White. Almost 88 percent was strict Low Middling White and equivalent grades or higher. Less than two percent was Strict Good Ordinary. The average staple length of the loan stocks was 32.6 thirty-seconds inch, a little longer than the estimate for the entire crop of slightly under 32.5 thirty-seconds. Almost 80 percent of these stocks was one inch or longer and over 56 percent was 1-1/32 inches and 1-1/16 inches in length. About 20 percent was shorter than one inch and a little under six percent was 7/8 inch or less.

Dairy Products.--A program to support the price of butterfat at a national average of 90 percent of parity during 1949, as required by the Agricultural Act of 1948, was announced February 8, by USDA. The support operations will be carried out through offers by the Department to purchase wholesale butter, when necessary. Although butter and butterfat prices have been declining in recent months they have not yet reached the levels of mandatory price support. With the approach of the flush production season the support program is being announced to assure that average prices to producers for butterfat will not fall below 90 percent of parity. In carrying out necessary support operations, USDA will offer to buy in any area during 1949 butter of U.S. Grade A or higher at 59 cents per pound for delivery before September 1, and at 62 cents for delivery on and after September 1. Support prices for U.S. Grade B butter will be 2 cents lower in each period. The seasonal differential is expected to encourage normal commercial storage of butter in the flush season, for marketing in fall and winter. Butterfat prices are based on the market prices of butter. Offers to purchase butter at the announced price levels are designed, on the basis of the normal spread between the price of a pound of butter and the cost of the butterfat in a pound of butter, to assure farmers a national average butterfat price during 1949 equal to 90 percent of parity which, on the basis of mid-January computation of parity, is 58.5 cents.

Fats and Oils.--United States production of edible fats and oils for the current crop year ending September 30, 1949, is estimated to be about 550 million pounds larger (7 percent) than the 7,170 million pounds produced in 1947-48. Export allocations for edible fats, oils, and oil-seeds issued as of February 1 for the period October 1948-March 1949 (including the supplemental allocations announced for the first quarter of 1949) total 729 million pounds, oil equivalent. This figure compares with 425 million pounds allocated during the corresponding period in 1947-48.

Fruits and Vegetables.--USDA has recommended adoption of several amendments to the marketing agreement and order regulating the handling of fresh Bartlett pears, plums and Elberta peaches grown in California. The amendments, results of proposals of the Control Committee and based on evidence presented at a Sacramento, California, public hearing, would group separately specified varieties of early plums; revise provisions authorizing daily shipment regulations so as to exclude plums from such regulations; and authorize the issuance of exemption certificates when regulations of minimum standards of quality and maturity are effective.

Grains.--USDA has announced that on the basis of preliminary reports a total of 3,427,769 100-pound bags of 1948-crop rice was placed under the support program as of January 31, 1949, the final day for participation. The total included 3,286,945 100-pound bags under purchase agreements and 140,824 100-pound bags under loans.

Livestock.--Hog prices will be supported at 90 percent of parity through March 1950, when the marketing season for 1949 spring pigs ends, according to an announcement made by USDA February 25. This action is taken to assure farmers the same level of price support during the last half of the October 1949-March 1950 marketing period as is required during the first half by the Agricultural Act of 1948. Hog price supports at 90 percent of parity are mandatory only through December 31, 1949 under this Act, which also authorizes support beyond this date under certain conditions. Specific price supports, with the usual seasonal variations, will be announced next fall for this entire period and will be based on the September 15, 1949, parity price. The October 1949-March 1950 period is the marketing season for 1949 spring pigs. To encourage increased marketings in this period, the 1949 spring pig goal announced last fall by the Department called for a spring pig crop of 60 million pigs, 17 percent more than the spring pig crop of 1948. The December Pig Crop Report indicated producers' intentions to farrow 14 percent more sows this spring than last.... Selling prices for wools purchased by CCC under the 1949 price support program will be the same as for wool purchased under the 1948 program, USDA has announced. This schedule, effective as of February 1, 1949 makes no change in sale price for most 1946, 1947 and 1948 program wools. Selling prices for 1945 wools will be reduced 3 cents per clean or scoured pound, while the schedule for pulled wools increased prices for slightly defective and discolored wools. The recently announced 1949 wool support program provides a national average wool price to growers of slightly more than 42 cents a pound, grease basis.

Poultry.--Egg prices will be supported in the Midwest through March, April, and May at the prevailing support level, which reflects an average of 35 cents per dozen for shell eggs, USDA announced February 11. The present program of purchasing dried eggs in the surplus-producing area will continue unchanged. If after a reasonable period it becomes clear that the purchase of dried eggs is not maintaining desired price levels, consideration will be given to the purchase of frozen eggs as a supplement to the dried egg purchase program.

Tobacco.--USDA has announced a loan program for 1948-crop Maryland (type 32) tobacco in loose leaf form. The loans, made on a grade basis, average 43.9 cents per pound and will be available only to the original growers, through the Maryland Tobacco Cooperative at Upper Marlboro, Md.

ABOUT MARKETING

The following addresses, statements, and publications, issued recently, may be obtained upon request. To order, check on this page the publications desired, detach and mail to the Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

Addresses and Statements:

Statement by Charles F. Brannan, Secretary of Agriculture, in regard to continuance of the European Recovery Program, before the House Committee on Foreign Affairs, February 17, 1949. 4 pp. (Processed)

Statement by Charles F. Brannan, Secretary of Agriculture, with respect to S. 900, a bill to amend the Commodity Credit Corporation Act, before the Senate Committee on Agriculture and Forestry, February 16, 1949. 3 pp. (Processed)

Rural Electrification in the National Farm Program, by Charles F. Brannan, Secretary of Agriculture, at New York, New York, January 31, 1949. 9 pp. (Processed)

American Agriculture on a New Frontier, by Charles F. Brannan, Secretary of Agriculture, at Des Moines, Iowa, February 19, 1949. 11 pp. (Processed)

Publications:

The Market News Service on Grain, Hay, Feed, and Related Commodities: Its Function, History and Operation. (PMA) January 1949. 10 pp. (Processed)

Distillation of Pine Gum at Central Plants. (PMA) January 1949. 22 pp. (Processed)

Cotton Quality Statistics: United States, 1947-48. (PMA) CS-33, December 1948. 61 pp. (Processed)

Annual Report on Tobacco Statistics: 1948. (PMA) CS-31. December 1948. 71 pp. (Processed)

Purchases of Dairy Products by U.S.D.A., 1948. (PMA) January 1949. 8 pp. (Processed)

An Explanation of The Egg Price Support Program. (PMA) February 1949. 5 pp. (Processed)

United States Standards for Grades of Fruit Preserves (or Jams). (PMA) Effective March 14, 1949. 17 pp. (Processed)

Canadian Cattle Situation 1948-49 Relative to Exports to the United States. (PMA) January 1949. 6 pp. (Processed)

